## ISHIKAWAJIMA-SHIBAURA MACHINERY CO., LTD.

EXECUTIVE ORDER U-R-026-0037 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)						
2002	2H3XL1.33J3V	1.330	Diesel	3000						
SPECIAL	FEATURES & EMISSION	CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION							
	Indirect Diesel Inje	ection	Tractor and Industrial Equipment							

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER	EMISSION STANDARD				EXHAUST (g/kw-l		OPACITY (%)					
CLASS	CATEGORY		нс	NOx	NMHC+NOx	со	РМ	ACCEL	LUG	PEAK		
8 <u>&lt;</u> KW<19	Tier 1	STD	N/A	N/A	9.5	6.6	0.80	20	15	50		
		CERT			7.8	2.4	0.67	12	9	18		

**BE IT FURTHER RESOLVED:** That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this

day of December 2001

R. B. Surpmerfield, Chief.

Mobile Source Operations Division

ATI HMENTIOFI

Engine Model C nary Form

U-R-026-0037

Manufacturer: Ishikawajima-Shibaura Machinery Co., Ltd.

Engine category: Nonroad CI

EPA Engine Family: 2H3XL1.33J3V

Mfr Family Name: N/A

Process Code: New Submission

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8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torque Device Per SAE J1930	<u>L</u>	旦	The second secon	And the second s											· consideration of the control of th					-			. dráma i respectivo de company de seguiro de l'especial d
8.Fuel Rate: (lbs/hr)@peak torque	8.0+/-0.4	8.8+/-0.4					:			AND REAL PROPERTY OF THE PROPE					alam ak para dan akan aran aran dan dan dan dan dan dan dan dan dan d								And the second s
7.Fuel Rate: mm/stroke@peak torque	28.7+/-1.4	29.8+/-1.5			HER THE SECTION OF THE PROPERTY AND ADMINISTRATION OF THE PROPERTY ADMINISTRATION OF THE PROPERTY AND ADMINISTRATION OF THE PROPERTY ADMINISTRATI				and the state of two states and two states and two states and the states and two states and two states and two	ak kind dan derivat dan serak ing mengan kepada perak perak perak perak perak perak dan dan dan dan dan dan da				The same of the sa	TOTAL CONTRACTOR OF THE PROPERTY OF THE PROPER	A COLUMN TO THE REAL PROPERTY OF THE PROPERTY		-					
6.Torque @ RPM (SEA Gross)	54.8@1700	49.9@1800										menon de mar mandete a conferent des			and the state of t	AND THE PROPERTY OF THE PROPER							
5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	7.0-/+6.6	10.4+/-1.0							em man man et i santi d'abble	AND THE PARTY OF T		e e puntos. Catalona la tanta de valor de la tanta	A NATIONAL PROPERTY OF THE PRO		de principal de la companya de la co	AND THE LAW AND THE CONTRACT OF THE CONTRACT O						e malerculare, un region de principales, estada administrator e sergas, sebie de septembra a testa de la compo	
4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	24.1+/-1.8	28.6+/-2.7							AND THE RESERVE OF THE PROPERTY OF THE PROPERT	AND THE RESIDENCE OF THE PROPERTY OF THE PROPE		A CONTRACT OF THE SECOND CONTRACT OF THE SECO	NA ARIAN ARIAN ARIAN ARIAN MANANCAN ARIAN ARIANA	and the state of t	and a second	A THE STATE OF THE	e de la companya de l		The state of the s	The same of the sa			
3.BHP@RPM (SAE Gross)	23.1@2500	23.7@2200		A A A A A A A A A A A A A A A A A A A		And Administrative Community and the property of the community of the comm	***************************************						a i de deservado de la compansión de la co		a programme and the state of th			LA AND AND AND AND AND AND AND AND AND AN	A CANADA DE LA CANADA DEL CANADA DE LA CANADA DEL CANADA DE LA CANADA DEL CANADA DE LA CANADA DEL CANADA DE LA CANADA DE L				
2.Engine Model	KH23/2500	KH24/2200				AND THE PROPERTY OF THE PROPER		THE PARTY OF THE P	THE RESERVE THE PROPERTY OF TH		A				ranno Martino, to l'Esperit propper reproductato materiale materiale per properna est.	en en de la companya		Try to the state of the state o				The right was a second	The same of the sa
1.Engine Code	103-13	103-13										And the second s	AND THE RESERVE OF THE PROPERTY OF THE PROPERT		CARLO I CARLO CALLO CALL	tema a a temany (spring pay					and the state of t		